

Introduction to Process Technology (PTAC 1302)



Credit: 3 semester credit hours (3 hours lecture)

Prerequisite/Co-requisite: None

Course Description

An introduction overview of the processing industries.

Required Textbook and Materials

1. *Introduction to Process Technology*, Pearson, Second Edition
 - a. ISBN number is 0-13-480824-X
2. Equipment (To be purchased by the student)
 - a. hardhat
 - b. safety glasses
 - c. shoes (no open toes/sandals)

Course Objectives

Upon completion of this course, the student will be able to:

1. Describe the roles, responsibilities, safety, environmental, and quality concepts associated with the work environment of a process technician.
2. Identify basic processes, equipment and systems.
3. Define and apply terms and symbols needed in the processing industry.

Course Outline

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|---|------------------------------|
| A. Introduction | L. Basic Physics |
| 1. Introduction of faculty and students | M. Basic Chemistry |
| 2. Review Syllabus | N. Piping and Valves |
| 3. Review Class Policies | O. Vessels |
| B. Process Technology- Overview | P. Pumps |
| C. Mineral Extraction Industries; | Q. Compressors |
| 1. Oil & Gas | R. Turbines |
| 2. Mining | S. Electricity & Motors |
| D. Chemical & Pharmaceutical Industry | T. Heat Exchangers |
| E. Power Generation Industry | U. Cooling Towers |
| F. Food & Beverage Industry | V. Furnaces |
| G. Water & Wastewater Treatment Industry | W. Boilers |
| H. Pulp & Paper Industry | X. Distillation |
| I. Working as Teams | Y. Process Service Utilities |
| J. Safety, Health, Environment & Security | Z. Process Auxiliaries |
| K. Quality | AA. Instrumentation |

Grade Scale

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

Course Evaluation

Final grades will be calculated according to the following criteria:

Homework	10%
Tests	50%
Final	40%

Course Requirements

1. Read chapters as assigned.
2. Answer questions at the end of each chapter.
3. Identify equipment shown in lab associated with subject matter
4. Have a calculator and be able to use it.

Attendance Policy

1. Missing more than 20% of classes will result in an automatic “F” for the course.
2. Absences are counted for unexcused, excused and coming to class late.
3. Missing more than 20% of a class period will count as an absence.
4. Being tardy 2 times equals 1 absence.

Course Policies

1. No food, drinks, or use of tobacco products in class.
2. Beepers, telephones, headphones, and other electronic devices must be turned off while in class.
3. Do not bring children to class.
4. Assignments submitted late will be reduced 10 points each day.
5. If a test is missed due to an emergency situation, the student will have one week to make it up; otherwise a grade of 0 will be assigned. Students are responsible for scheduling the make-up date.

6. No cheating of any kind will be tolerated. Students caught cheating or helping someone to cheat can and will be removed from the class for the semester. Cheating can result in expulsion from LIT.
7. A student who wishes to drop a course is responsible for initiating and completing the drop process. A student who stops coming to class, and fails to drop the course, will earn an “F” in the course.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the online resource:

<http://www.lit.edu/depts/stuserv/special/defaults.aspx>

Student Code of Conduct Statement

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu or obtained in print upon request at the Student Services Office.

Supplemental Instruction

Supplemental Instruction (SI) consists of group tutoring sessions conducted once a week for 50 minutes for selected subjects. The SI Leader is a peer who helps students learn difficult content in those specific courses. The SI Leader attends the class with the students to keep up with the course content and engage students in interactive learning strategies at the 50 minute sessions. For this course, the supplemental instruction session will be held on WE DO NOT HAVE SUPPLEMENTAL INSTRUCTION. See your instructor for assistance.

Starfish

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.



Course Schedule

Week	Topic	Reference
1/2	Course introduction and policies.	Handouts & Textbook (chapters 1-3)
3	Power Generation Food & Beverage	Chapter 4 Chapter 5
4	Water & Wastewater Pulp & Paper **TEST 1**	Chapter 6 Chapter 7
5	Working as Teams SHES	Chapter 8 Chapter 9
6	Quality Basic Physics	Chapter 10 Chapter 11
7	Basic Chemistry **TEST 2**	Chapter 12
8	Process Drawings Piping & Valves	Chapter 13 Chapter 14
9	Vessels **TEST 3**	Chapter 15
10	Pumps Compressors	Chapter 16 Chapter 17
11	Turbines Electricity & Motors	Chapter 18 Chapter 19
12	Heat Exchangers Cooling Towers	Chapter 20 Chapter 21
13	**TEST 4** Furnaces	Chapter 22
14	Boilers Distillation	Chapter 23 Chapter 24
15	Process Service Utilities Process Auxiliaries	Chapter 25 Chapter 26
16	Instrumentation **TEST 5**	Chapter 27
17	Finals Week	Chapters 1- 27

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Course Syllabi